YWPC

PRODUCT ASSESSMENT REPORT

PREPARED FOR

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The following report summarizes INPUT's assessment of the four products examined (DELTA, DB PLUS, CITEX, RAFEX) in terms of:

- Customer Characteristics
- Competition
- Pricing
- Marketing Issues

Much of this information was discussed orally at meetings at Warburg, Pincus on February 1, 1984 and has been supplemented by addition information. Information contained here represents the best available to INPUT at the time this report was prepared.

1. DELTA (Application Generator)

Customer Characteristics

- The key element determining customer characteristics is that an application system must be 20-30 man-years in size to receive the time and cost benefits from DELTA. For an industrial company this means approximate sales of $750 million, i.e., the Fortune 350. (See Exhibit I for reasoning).

- In round numbers this provides the following initial potential market in the U.S.

  350 industrial companies.
  100 banks/insurance companies.
  25 other (e.g., retailers, service).
  25 Government.
  500 Total

- Assuming 2 sites per customer, then there is a potential market for 1000 copies of DELTA.

Competition

- There is no current competitive product or approach that takes into account the full development life cycle (see Exhibits 2 and 3).

  - The DELTA DESIGNER AND APPLICATION BUILDER products from DWW Inc. (headed by James Martin) came closest in concept. However, they are not unified, not as comprehensive as DELTA and are relatively new with only a few sales.

  - Because of the conceptual uniqueness and sheer size of DELTA, it would take several years to develop a "work-alike" product.

- The biggest competitive threats, which at this point are non-qualifiable, come from products which side-step some or all of the conventional development life cycle. These include:

  - Packaged application software.
  - DBMS-based "suites".
  - Fourth Generation Languages.

- Packaged Application Software: Most application developers first look to packages now and turn to internal development as a second choice, because of decreased time, money, risk and maintenance. A fairly new twist to this is where custom applications are still developed, but with an explicit view toward selling the result as a package later. This is being fostered by professional services firms that wish to develop products to sell through their established sales networks.

- DBMS-Based "Suites": The leading vendors of data base management systems (DBMS) are increasingly offering full sets of tools which tie into the DBMS. This trend is illustrated in Exhibit 4 and 5.

- These vendors include ADR, Cincom and Cullinet. Their products do not cover the application definition and design stages; however, they can be used in conjunction with established methodologies.

- These vendors will produce strong marketing arguments that it is desirable to build an application integral to a DBMS. This may be influential for those who already have many applications built around a particular DBMS.

- Fourth Generation Languages (FGL): These languages (e.g., FOCUS, RAMIS II, NOMAD 2) have become increasingly accepted as end users (tools used in an Information Center setting) with the implicit or explicit goal of reducing user demands on MIS. However, there is also a trend to use them in serious application development:

  - FGL's are excellent prototyping tools. Used intelligently, they can replace most or all of the requirements, specifications and detail design stages. They can produce acceptable results that users understand. Output is available in a much shorter period of time. The results can be programmed using conventional means (e.g., COBOL).

  - Taking this approach one step further is the use of prototype as the actual application software. For FGL's that are integrated into a DBMS (such as Software AG's ADABAS-NATURAL combination), the resulting product offers similar user benefits to DELTA but takes a radically different approach to do so.

    . Since the approach is so different, relatively few firm have actually used FGL's in a production environment. However, each FGL vendor can point to at least a few companies using a FGL for high volume production.

    . A limitation on the use of FGL's as production languages is their less efficient use of hardware resources than a COBOL system. FGL vendors say there need not be any hardware productivity degradation, but in INPUT's experience increased hardware requirements of 50% to 100% are not unusual. This is becoming less important as hardware costs fall in relation to personnel costs.

- The rise of personal computers (PC's) opens further options by allowing systems to be developed more cheaply on small machines (e.g., the PC XT/370). More importantly, this computing power will be accessible by end users.

  - All FGL vendors perceive this and are rushing to put products on PC's.

  - In principal, important systems could be built using FGL's on PC's without reference to the central data processing. For a number of reasons, this is unlikely to happen in most companies, but will be an issue that will further muddy the competitive environment.

Pricing

- Pricing on DELTA can be aggressive.

  - There is no direct competitor or one likely in the future.

  - The cost of DELTA compared to project costs (multi-millions) and the opportunity costs of the system being developed (tens of millions) will be small.

- Fourth Generation Languages now cost abut $100,000 (with add-ons) and DBMS suites over $200,000. DELTA, being positioned as more comprehensive than either, can then be priced accordingly. In large companies a high price will be at least as acceptable as a low price.

Marketing Issues

- After a beachhead has been secured, the marketing cycle will still be relatively slow.

  - DELTA is a complex product.

  - DELTA will require a revamping of an MIS department's development approach.

- The benefits from DELTA accrue from large, high visibility projects. Hence, using DELTA is risky.

- The system life cycle approach is becoming discredited in some circles. Since DELTA is based on this approach, education will be required.

- Early sales must be targeted at companies most likely to benefit so that reference selling can be effective.

- A PC version will be required, as much for marketing as functional reasons.

- A separate issue is whether DELTA can be modified to produce segmented application systems (i.e., where part of the application runs on the mainframe and part(s) on minis and/or micros).

  - This segmentation is now done using judgment or intuition and often produces poor results.

  - In INPUT's view this issue will be one of the key development issues for the remainder of the 1980's.

  - If the DELTA product could be modified to assist in a more rigorous segmentation process, it would truly be a product for the 1990's.

2. TOMINY'S DB PLUS

Customer Characteristics

- Targets: European companies with diverse small IBM machines (4300, Series 1, S/34, S/36, IBM PC) that wish a DBMS that extends across them (and into the large 3000 series also).

  - This product is especially suitable to medium-sized independent companies as well as autonomous divisions of larger companies.

  - This product could prove to have interesting applications in the development of segmented system (see "marketing" section of DELTA).

- The only settings where DB Plus would have difficulty in becoming established is in large companies that have chosen to standardize around a mainframe-oriented DBMS. However, multiple DBMS's within a company are common and will become more so.

- Operating only in an IBM environment limits the market. This is a necessary trade-off for portability.

Competition

- INPUT knows of no other DBMS product covering this range of machines.

- There is little question, however, that all DBMS vendors will be looking to use the capabilities of the XT/370.

  - INTEL, for example, a leading chip manufacturer and a DBMS vendor (System 2000), has introduced a hardware/software package (iDIS) to link common data bases in mainframes and PCs.

  - Vendors may not offer full functional portability, but what might be called "marketing portability" (i.e., a not very useful product subset, rushed to market).

Pricing

- DP Plus pricing in the U.S. seems reasonable. The PC version price ($7,000) is presumably for Quantity 1.

- It is too early to say what the best pricing approach is to packages that run on both mainframes and PC's. FOCUS, an early entrant, prices its PC version at $1,000 (with additional quantity discounts).

Marketing Issues

- Early entry and fast build-up will be critical, especially for a lesser-known product. Products that only bridge the PC (XT/370) and the 3000 series will be perfectly (if not more) acceptable to many customers.

3. CITEX (Telex to 3270)

Customer Characteristics

- Target customers are those with telex networks where there is significant need to communicate directly with 3270 terminals. There are two subdivisions of this market.

  - Domestic telex users.

  - International telex users (perhaps 100-150 industrial companies and 50 large banks.)

- Overall, the domestic market is stagnant or shrinking. Long terms causes are:

  - Company specific electronic mail (EMS) networks.

  - Public EMS

  - Personal computers as all-purpose terminals.

- A recent development, which will probably have long term implications, is the line access change mandated by the FCC as a result of AT&T's breakup. Western Union (the US telex/twx carrier) stands to suffer disproportionately on its telex network. It is consequently vigorously promoting its "Easy Link" service which is essentially an electronic mailbox for a company/individual that can be accessed by any user with a PC. This, of course, produces the same end result as a CITEX-type product.

- From discussions with several communications managers, it appears that the need for a CITEX-type product in the US is relatively low:

  - One respondent stated that when telex-to-system needs arose, his company replaced the telex with a PC or added a PC.

- Another said that most large companies had solved this problem one way or another already. His response to the CITEX concept was "Great, but so what".

- There is more of a need for this kind of product for international telex traffic and within Europe.

Competition

- The main competition is from service organizations. DTSS and Tymshare offers this kind of service through their networks domestically.

- The international market is being serviced by Electronic Mail Corporation of America (EMCA) in conjunction with Southern New England Telephone.

  - EMCA has a series of specialized translation chips for conversion (including telex). EMCA is familiar with the Manoff product. (Note: Name volunteered by EMCA.)

- INPUT believes that in the U.S. the service approach to this kind of problem will be more attractive except for the very biggest international companies with an extensive, long term commitment to telex networks:

  - The learning curve will be shorter.

  - The service vendor can react to the significant amount of technical and political changes occurring in this area.

Pricing

- For those with a need the proposed pricing is reasonable. Lower prices are not likely to generate much additional business.

Marketing Issues

- The U.S. market appears to be marginal for this kind of product.

4. RAFEX (Foreign Exchange)

Customer Characteristics

- Currently, 200-300 banks and brokerages.
- In the future there will be a similar need in Treasurer's offices of large corporations (top 100-200).
- There is a move from mainframe systems to standalone products.

Competition

- This is very competitive, to the point of saturation. Exhibit 6 lists both foreign exchange (FE) only products as well as those tied into international banking system packages. Some of the mainframe-based products are being converted to be standalone products.
- In addition at least two major U.S. financial institutions are developing FE products which they intend to resell.

Pricing

- A $50,000 unit price is reasonable.

Marketing Issues

- A foreign-developed product may be perceived as not meeting the needs of the U.S. environment.

Exhibit 1: Derivation of DELTA Customer Size

- 20 man-years at $75,000 loaded cost per year = $1.5 million project cost. Assume a 2 year project or $.75 million development cost in a year.

- Assume 50-50 split between personnel and non-personnel costs in the MIS budget. Assume personnel is further split into 10% operations and administration, 20% maintenance and 20% new development.

- Assume that half of new development is in smallish projects unsuitable for DELTA. This leaves 10% of the MIS budget for DELTA sized projects: Consequently, an overall minimum MIS budget of $7.5 million a year is necessary to be a DELTA customer.

- The typical corporation devotes about 1% of its revenues to data processing. Hence, a $7.5 million MIS budget equates to a $750 million corporation.

APPLICABILITY OF SELECTED TOOLS

TOOL \ LIFE-CYCLE PHASE	REQUIREMENTS	SPECIFICATIONS	DETAIL DESIGN	CODE	TEST	MAINTENANCE
ON-LINE SYSTEMS						
• CMS, TSO				———	———	———
DBMS AND QUERY LANGUAGES						
• IMS, 204, ETC.			———	———	———	
SYSTEMS DESIGN METHODOLOGIES						
• PRIDE, SDM/70	———	———	———	- - -	- - -	- - -
REQUIREMENTS LANGUAGES						
• PSL/PSA	———	———				
ORGANIZATIONAL TECHNIQUE						
• CHIEF PROGRAMMER TEAM			———	———	———	
PROGRAMMER'S WORKBENCH						
• MAESTRO, PWB/UNIX			———	———	- - -	- - -
STRUCTURED ANALYSIS						
• JACKSON			———	———		
• SADT	———	———				
• STRUCTURED TABLEAU	———	———				
• WARNIER-ORR	———	———				
MENU-DRIVEN PROGRAM						
• DMS, TAPS		- - -	- - -	- - -	- - -	
VERIFICATON AND VALIDATION						
• STATIC AND DYNAMIC					———	
• STRUCTURED WALK-THROUGH				———		
MISCELLANEOUS						
• PDL		———	———			
• REUSABLE CODE	———	———	———	———	———	———

- - - - POTENTIAL APPLICABILITY

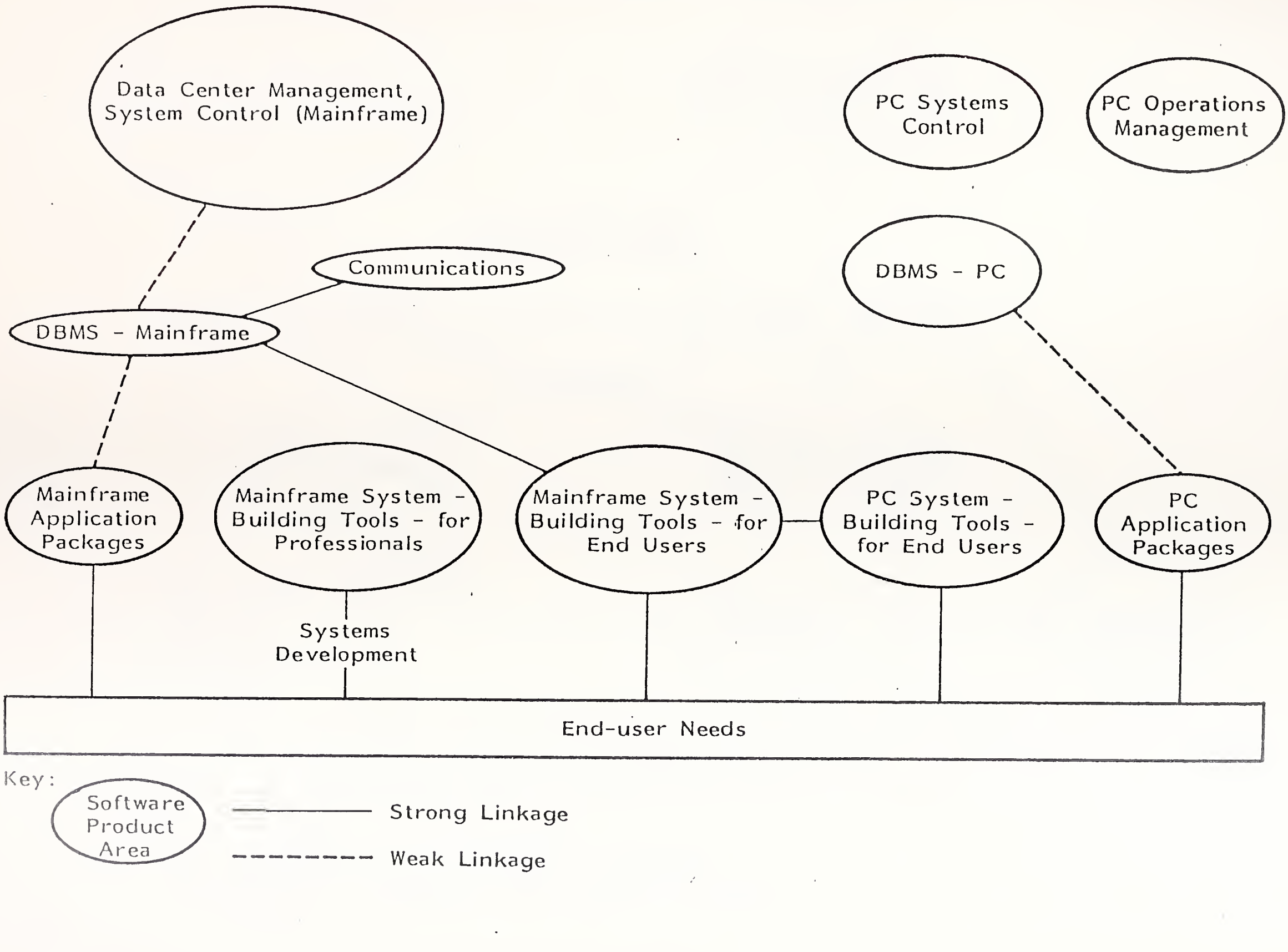
EXHIBIT 3

IMPACT OF SELECTED TOOLS

TOOL \ LIFE CYCLE PHASE	REQUIREMENTS	SPECIFICATIONS	DETAIL DESIGN	CODE	TEST	MAINTENANCE
ON-LINE SYSTEMS						
• CMS, TSO				P	S	S
DBMS AND QUERY LANGUAGES						
• IMS, 204 ETC.			P	S		
SYSTEM DESIGN METHODOLOGIES						
• PRIDE, SDM/70	P	P	S	S	S	S
REQUIREMENTS LANGUAGES						
• PSL/PSA	P	P	S	S	S	S
ORGANIZATIONAL TECHNIQUE						
• CHIEF PROGRAMMER TEAM			P	S	S	
PROGRAMMER'S WORKBENCH						
• MAESTRO, PWB/UNIX			S	P	S	S
STRUCTURED ANALYSIS						
• JACKSON			P	S	S	S
• SADT	P	P	S		S	S
• STRUCTURED TABLEAU		P	S	S	S	S
• WARNIER-ORR		P	S	S	S	S
MENU-DRIVEN PROGRAM						
• DMS, TAPS			S	P	S	S
VERIFICATION AND VALIDATION						
• STATIC AND DYNAMIC					P	S
• STRUCTURED WALK-THROUGH			S	P	S	S
MISCELLANEOUS						
• PDL			S	P	S	S
• REUSABLE CODE		S	S	P	S	S

NOTE: P = PRIMARY; S = SECONDARY

HISTORIC SYSTEM SOFTWARE PRODUCT LINE RELATIONSHIPS



FUTURE SYSTEM SOFTWARE PRODUCT LINE RELATIONSHIPS

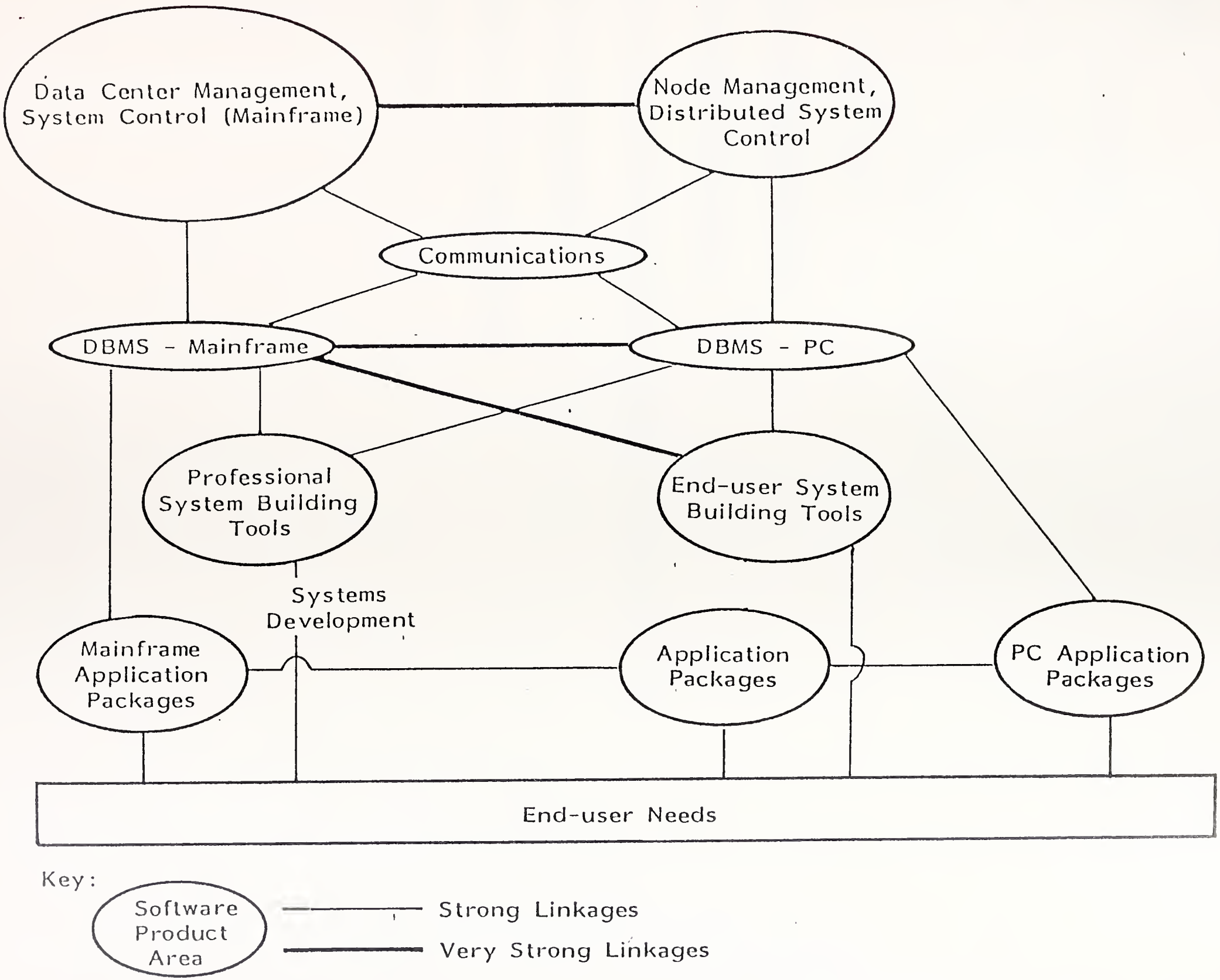


Exhibit 6: Foreign Exchange Products

FE Only

Multicurrency FE (Index)

Keyfex (Keystone)

Steman and Stefi (Sturia) - Turnkey or software

Real Time FE (Logica)

FE and International Banking

International Banking (Index)

International Banking (Information Management) - Service or Software

IBIS (Tymshare) - Service

STOBI (Sturia) - Turnkey or software

MIDAS (BIS)